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09/664,241	09/18/2000	Andreas Hajek	Hoeger-422	4110

7590 10/19/2004  
Edward J Timmer  
Walnut Woods Centre  
5955 W Main Street  
Kalamazoo, MI 49009

EXAMINER
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EGWIM, KELECHI CHIDI

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.



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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/664,241  
Filing Date: September 18, 2000  
Appellant(s): HAJEK ET AL.

\_\_\_\_\_  
Edward Timmer  
For Appellant

**EXAMINER'S ANSWER**

GROUP 1700  
OCT 19 2004  
MAILED

This is in response to the appeal brief filed 08/26/2004.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences that will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

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**(3) Status of Claims**

The statement of the status of the claims contained in the brief is correct.

**(4) Status of Amendments After Final**

No amendment after final has been filed.

**(5) Summary of Invention**

The summary of invention contained in the brief is substantially correct as being defined by appellants independent claim 1.

However, the examiner would more simply summarize the invention as a moulding composition, intended for use in preparing sanitary-ware articles (bathroom and kitchen molded parts), comprising a methyl-methacrylate-based syrup, from 50 to 85% by weight, based on the total weight of the moulding composition, of an inorganic filler, and 5% by weight to less than 20% by weight, based on the weight of the syrup, of elastomer particles or particle aggregates having particle sizes smaller than 100 pm, said amount of elastomer particles or particle aggregates being effective to impart improved resistance to scratching to a sanitary-ware article molded from said moulding composition as compared to a sanitary-ware component molded from a similar moulding composition devoid of said elastomer particles or particle aggregates.

**(6) Issues**

The appellant's statement of the issues in the brief is correct.

**(7) Grouping of Claims**

The appellant's statement in the brief that certain claims do not stand or fall together is not agreed with because appellant merely points out the additional

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limitations recited in the dependent claims as support for their statement. 37 CFR § 1.192(c)(7)(1997) provides in pertinent part, "[m]erely pointing out differences in what the claims cover is not an argument as to why the claims are separately patentable."

The examiner finds no valid reason why the claims should not be grouped together. The rejection of claims 1-13 stand or fall together and claim 1 is representative of the present invention.

**(8) Claims Appealed**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) Prior Art of Record**

EP 639,539	KRIEG ET AL.	2-1995
DE 2135828	FINK ET AL.	2-1973
US 3,661,994	HWA ET AL.	5-1972
US 4,180,529	HOFMANN	12-1979
WO 88/05450	HENTON	7 1988
US 5,087,662	ALSMARRAIE ET AL.	2-1992

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-7, 9, 10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krieg et al. (EP 639539) in combination with Hwa et al. (USPN 3,661,994). The citations from Krieg et al. are from the provided English translation.

Krieg et al. teach filled molding compositions, which are known to be useful in bathroom and kitchen molded parts (see page 3 of the translation), comprising a

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poly(methyl methacrylate) syrup (PV-comprised of liquid PMMA (PM) in methyl methacrylate monomer) containing 1 to 15 percent by weight, based on the syrup, of PMMA having a molecular weight from about 10,000 to 400,000 (PM) (see page 6 bottom of ¶ 3 to page 7 ¶ 2), 30 to 80 percent of inorganic filler (FS) (see 5 ¶ 5) and 1 to 20 percent of solid particulate polymers (PP) which have particle sizes especially ranging from 0.13 to 0.15 mm (30 microns to about 150 microns) (see page 12, ¶ 2).

Further, in page 12, ¶ 2, Krieg et al. teach the solid particulate polymer (PP) to be optionally crosslinked and to be prepared as described in DE 2135828 to Fink et al. (incorporated by reference), which, in the abstract, teaches the solid particulate polymer particles (PP) to have glass transition temperatures below 35 °C, suggesting that they are elastomeric.

Krieg et al. differs from the claimed invention in that the solid particulate polymer particles (PP) are not explicitly disclosed to be elastomers. However, it is known in the art to incorporate such elastomeric particulate polymers, particularly with an elastomer core and matrix compatible shell, into rigid molded parts such as from poly(methyl methacrylate), for the purpose of imparting improved impact strength onto the products through the elastomer whilst maintaining good adhesion between the elastomer (core) and the continuous matrix phase through the matrix compatible outer shell, such as taught by Hwa et al. (See col. 1, lines 28-30 and 65-72).

In col. 1, lines 24-30 and 64-72, col. 3, lines 15-22 and col. 4, lines 1-7, Hwa et al. teach that rigid plastic parts from poly(methyl methacrylate) can be improved by reinforcing them with elastomeric particles, wherein the elastomeric particles are grafted

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with an outer matrix compatible layer to improve compatibility with the rigid polymer matrix, thereby forming a core/shell structure. Hwa et al. teach that such elastomer particles may comprising up to four layers, as long as at least one core layer comprises an elastomer.

In col. 4, lines 8-19, Hwa et al. expresses the elastomer (rubber) content of the solid particulate polymer particles in terms of the elastomer replaced (see figure 4), being preferable from 0.5 to 30% (about 15 to 60% of particle thickness is core/elastomer).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to use elastomeric particles as taught in Hwa et al., as solid particulate polymer particles (PP) in the poly(methyl methacrylate) composition of Krieg et al., in order to improved impact strength in the products, such as taught by Hwa et al., motivated by a reasonable expectation of success.

Claims 1-10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krieg et al. in combination with Hofmann (USPN 4,180,529) or Henton (WO 88/05450)

Krieg et al., above, differs from the claimed invention in that the solid particulate polymer particles (PP) are not explicitly disclosed to be elastomers. However, it is known in the art to incorporate such elastomeric particulate polymers, particularly with an elastomer core and matrix compatible shell, into rigid molded parts such as from poly(methyl methacrylate), for the purpose of imparting improved impact strength onto

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the products, whilst maintaining good adhesion between the elastomer particles and the continuous matrix phase and/or whilst reducing the stress whitening of the products and maintaining good weatherability, such as taught by Hofmann (See col. 1, lines 19-25 and 42-52) or Henton (See page 3, lines 4-26).

In col. 1, line 55 to col. 2, line 4, col. 2, lines 31-46, col. 3, lines 50-68 and col. 4, lines 5-7, Hofmann teaches elastomer (resilient) particles used to reinforce rigid plastics such as poly(methyl methacrylate), wherein the elastomer particles comprising up to four layers, wherein at least one core layer comprises an elastomer. Hofmann teaches the outer layers of the particles to optionally be crosslinked and the core elastomeric stage(s) to comprise about 60 to 95 % of the particles.

In page 1 ¶ 1, page 3 ¶ 2, page 5 ¶ 2, page 6 ¶ 3 and page 7 ¶ 3, Henton teaches elastomer particles used to reinforce rigid plastics such as poly(methyl methacrylate), wherein the elastomer particles comprising at least one core elastomer. Henton teaches the outer layer to be at least partially crosslinked and the core elastomeric stage(s) to represent up to 99% of the particles.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to use elastomeric particles as taught by Hofmann or Henton as the solid particulate polymer particles (PP) in the poly(methyl methacrylate) composition of Krieg et al., in order to obtain the advantages taught by Hofmann or Henton, motivated by a reasonable expectation of success.

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Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krieg et al. in combination with Alsmarraie et al. (USPN 5,087,662).

Krieg et al., above, differs from the claimed invention in that the solid particulate polymer particles (PP) are not explicitly disclosed to be elastomers. However, it is known in the art to incorporate such elastomeric particulate polymers, particularly with an elastomer core and matrix compatible shell, into rigid molded parts such as from poly(methyl methacrylate), for the purpose of imparting increased impact strength onto the products, such as taught by Alsmarraie et al. (See col. 5, lines 10-14).

In col. 5, lines 10-14, col. 7, lines 12-31 and col. 12, lines 13-26, Alsmarraie et al. teach elastomer (resilient) particles used to reinforce thermoplastics, wherein the elastomer particles comprise a polyorganosiloxane elastomeric core and at least one outer layer is a matrix compatible layer from a monomer such as methyl methacrylate, grafted together with graftlinking (crosslinking) monomers and the core elastomer stage comprises about 5 to 95% of the particles.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to use the elastomeric particles of Alsmarraie et al. as the solid particulate polymer particles (PP) in the poly(methyl methacrylate) composition of Krieg et al., in order to obtain the impact strengthening advantages taught by Alsmarraie et al., motivated by a reasonable expectation of success.

**(11) Response to Argument**

Regarding appellant's arguments against Krieg et al., appellant states that the patent "is grossly deficient" since it does not expressly disclose the solid particulate



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polymer particles to be elastomeric. However, one cannot show nonobviousness by attacking references individually where the rejections are based on the combination of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). It is also noted that the solid particulate polymer particles in Krieg et al. would only have been elastomeric or non-elastomeric. These are the **only two choices**.

Regard the arguments against Fink et al., which is incorporated by reference in to Krieg et al., no reliance on Fink et al. is required for the rejection of the claims under 103(a). Fisk merely further illustrates what is taught in Krieg et al. Appellant is directed to the middle of page 12 in the translation to Krieg et al., which states "[t]he production polymer pearls of **a suitable type** is, for example, described in ... DE-A 21 35 828" (emphasis added). Clearly the reference to "a suitable type" in Fisk et al., in which the paragraph discusses compositional monomers, crosslinking, polymerization process, etc., as well as particle size, is not intended to be exclusive to particle size.

Regarding the argument of "hindsight analysis" and that Fisk et al. is nonanalogous art, these arguments are misplaced since Fink et al. is **incorporated by reference** into Krieg et al. to complete its disclosure.

Regarding the argument that Krieg et al. does not recognize a deficiency in and is not concerned with achieving improved resistance to scratching and abrasion, the fact that appellant has recognized another advantage which would flow naturally from following the suggestion of the prior art (as stated above and below) cannot be the basis

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for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

In response to appellant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the appellant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Regarding the argument that Hwa et al. teach away from adding the rubber particles to a rigid plastic for any other reason other than impact strength, the argument is irrelevant since no additional reason is required. The fact that the addition of the elastomer particle will improve the impact strength of rigid plastics is sufficient motivation to add said elastomer particle to the plastics. Even so, in col. 1, lines 38-41, Hwa et al. teach that a compromise between the desire to increase impact strength and the balance of other necessary properties is achieved in products. One of ordinary skill in the art would have found it prima facie obvious to determine a workable or even optimum range of the concentration of the elastomer particle additives. "[D]iscovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980); "[W]here the general conditions of a claim are disclosed in the art, it is not inventive to

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discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

In response to appellant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, while Krieg et al., differs from the claimed invention in that it's solid particulate polymers (PP) are not explicitly disclosed to comprise elastomers, it is known in the art to incorporate particulate elastomeric polymers into rigid elastomeric moulding compositions, such as from poly(methyl methacrylate), for the purpose of imparting improved impact strength onto the products, such as taught by Hwa et al. (See col. 1, lines 28-30 and 65-72), Hofmann (See col. 1, lines 19-25 and 42-52), Henton et al. (See page 3, lines 4-26) or Alsmarraie et al. (See col. 5, lines 10-14).

Again, in response to appellant's arguments against the references individually (i.e., Hwa et al., Hofmann, Henton et al. and Alsmarraie et al.) one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

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In response to appellant's argument that the references (i.e., Hwa et al., Hofmann, Henton et al. and Alsmarraie et al.) do not explicitly teach the composition to be useful in sanitary-ware, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

**KELECHI C. EGWIM PH.D.**  
**PRIMARY EXAMINER**

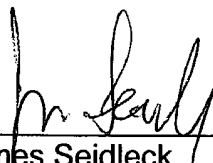
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October 14, 2004

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